



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,914	09/22/2003	Naohide Fuwa	116642	7394
25944	7590	03/18/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			ESHETE, ZELALEM	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

<b>Office Action Summary</b>	Application No. 10/664,914	Applicant(s) FUWA ET AL.	
	Examiner Zelalem Eshete	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                                 |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                            | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/22/2003</u> . | 6) <input type="checkbox"/> Other: ____.                                                |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3,5,6,8,9 are rejected under 35 U.S.C. 102(e) as being anticipated by Iwasaki et al. (2002/0107633).

Regarding claims 1,8: Iwasaki discloses a method and an internal combustion engine comprising: an intake valve; and a variable valve actuation device that is capable of variably controlling lift of the intake valve so as to change an amount of opening of the intake valve (see figures 2,3; paragraph 032); wherein the variable valve actuation device is adapted to: calculate valve a first estimated value of an amount of intake air from a parameter regarding an operation state of the engine at a time of opening the intake valve (see figure 5, numeral S13; paragraph 0044); calculate a second estimated value of the amount of intake air from a parameter regarding the operation state of the engine at a time of closing the intake valve (see figure 5, numeral

Art Unit: 3748

S12; paragraph 0044); and calculate an actual amount of intake air based on the first estimated value and the second estimated value (see figure 5, paragraph 0043).

Regarding claims 2,9: Iwasaki discloses the claimed invention as recited above; and further discloses calculating a weighting factor that indicates a weight of the estimated values of the amount of intake air on the actual amount of intake air (see figure 5, numeral S15); and calculate the actual amount of intake air based on the first estimated value, the second estimated value and the weighing factor (see figure 5, paragraph 0043).

Regarding claim 3: Iwasaki discloses the variable valve actuation device is adapted to calculate the weighing factor, taking into account a process of change of the parameter regarding the operation state of the engine during a period from the time of opening the intake valve to the time of closing the intake valve, in that the weighting factor is a function of engine speed (see figure 5, numeral S15).

Regarding claim 5: Iwasaki discloses the parameter regarding the operation state of the engine comprises an amount of change in a maximum lift of the intake valve (see paragraph 0044).

Art Unit: 3748

Regarding claim 6: Iwasaki discloses the parameter regarding the operation state of the engine comprises an amount of change in closing timing of the intake valve (see figure 5, numeral S12; paragraph 0044).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki in view of Yamamoto et al. (JP 4166633).

Iwasaki discloses the claimed invention as recited above; however, fails to disclose the parameter regarding the operation state of the engine comprises an amount of change in intake pressure in the calculation of intake air amount.

However, Yamamoto teaches disclose the parameter regarding the operation state of the engine comprises an amount of change in intake pressure in the calculation of amount of intake air (see abstract). Yamamoto further teaches various variables that can be used in calculating the amount of intake air (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Iwasaki's system by adding intake pressure variable in

Art Unit: 3748

the calculation intake air amount as taught by Yamamoto in order to implement various available options as taught by Yamamoto.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki in view of Yamamoto, and further in view Sugiyama et al. (6,792,901).

Iwasaki as modified above discloses the claimed invention as recited above; however, fails to disclose the parameter regarding the operation state of the engine comprises an amount of change in a working angle of the intake valve in the calculation of intake air amount.

However, Sugiyama teaches the intake air amount is correlated to the working angle of the intake valve (see figure 12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Iwasaki as modified above by adding working angle variable as taught by Sugiyama in order to implement various available options as taught by Yamamoto.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (571) 272-4860. The examiner can normally be reached on Monday to Thursday.


Art Unit: 3748

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zelalem Eshete  
Examiner  
Art Unit 3748



  
THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700